ECONOMICS OF MILK PRODUCTION IN OHIO

Dairy farm profits for 1976 are not expected to be much better than last year. In fact, if costs continue the upward trend that has been occurring for the past few years, if the milk price does not improve, profits could be less in 1976. The main cost component that may cause more dairy profits than in 1975 would be the reduced feed costs due to the grain price trends the past few months. There is a wide variation between the cost of producing milk between dairymen. Table I shows the wide variation between the top 25 percent profit-wise dairymen who turned records in for analysis in Ohio 1970 through 1974 and the low 25 percent profit dairymen.

TABLE I: COMPARISON OF PRICE RECEIVED WITH TOTAL COST OF PRODUCING MILK, OHIO, 1970-1973

		Upper 25% Farms			Lower 25% Farms		
		Price Received	Cost of Production 1/	Profit (Loss)	Price Received	Cost of Production	Profit (Loss)
	Unit	$ Per Cwt	$ Per Cwt	$ Per Cwt	$ Per Cwt	$ Per Cwt	$ Per Cwt
1970		5.38	4.81	.57	5.20	5.99	(.79)
1971		5.64	4.73	.91	5.40	6.96	(1.56)
1972		5.70	5.12	.58	5.57	6.37	(.80)
1973		6.66	6.02	.64	6.36	7.71	(1.35)
1974		7.86	8.44	.42	7.84	11.19	(3.35)

1/ Costs include operators labor, interest not charged and depreciation.

Prepared by John E. Moore, Extension Economist, Farm Management, O.S.U.

The present cost-price squeeze means that the dairymen will need to do an even better job of planning and dealing with the details of the business if profits are to be maintained. Extra time spent evaluating last year's business to see where the weak and strong spots were is basic for planning ahead. Complete and accurate dairy business records with a computer year-end business analysis available through the Extension Service or Vocational Agriculture departments are invaluable in times of increased costs of inputs and sticky prices. This computer year-end business analysis assists a manager in doing the fine tuning that is necessary in today's farm business planning.

Following are some specific areas of the farm business that need to be looked at in more detail in 1976:

Feed

The feed cost squeeze is the real culprit. Feed constitutes from 50-60 percent of the total costs in dairying. The last few years feed costs have increased drastically as has been pointed out previously. Compare feed grains and proteins on their feeding value and on their most economical source. Forage is the key ingredient so make changes gradually. Ration analysis and least-cost ration computer programs are available through your dairy science and farm management area extension agent. Considerable feed can be wasted by rodent damage and by feed bunks in poor repair.

Machinery and Equipment

Mechanization must either help expand the volume of business, reduce the hired labor requirement or improve timeliness otherwise net profits can be reduced by the new investment. Repairs, depreciation, insurance, interest and fuel make up 25 to 35 percent of the cost of production.

How do you keep these costs down? One way to keep costs down would be, overhaul repair and tune up machinery during winter days, this can reduce fuel consumption and save valuable time later. Another way to keep costs down is if new purchases seem necessary consider all methods of gaining control to get the job done before committing capital.

Fertilizer, Seed, Sprays

Costs of these items have skyrocketed in the past two years. Plan to purchase well in advance of need. Forced or last minute decisions are generally most costly. Some cautions: 1) Don't over fertilize. It's very important to have some idea of yield response on your soils. An extra 100 pounds of fertilizer without added yield will be money wasted. 2) Store these supplies where there will be no wasted material. 3) Use only the amounts of seed and spray recommended. The old feeling of, "If a little will do the job, more is better" is a costly practice today.

Fuel Costs

The rapid fuel price increase in 1974-75 has finally eased. However, there is a chance for further rise. Fuel saving steps are in order: a) Tune-up tractors and motors to get most efficient use of fuel. b) Reduce all unnecessary trips with tractors, trucks and automobiles. Plan ahead for your needs from town so one trip will do the job of three or four.

Borrowed Money

Interest rates are high and will probably continue at high levels. How can you keep costs down? a) Use a minimum of dealer credit. This will usually run a minimum of one percent per month but usually 1½ percent per month. This is an annual rate of 12-18 percent. b) Pay off short-term debt as fast as possible. This usually has higher interest rates than long term money. c) Don't pay your mortgage any faster than needed.

It is your lowest interest rate. Use extra money to pay off short-term debt or buy supplies at discount rates. d) If necessary, refinance debts so a larger amount is on a long term basis with lower interest rates. If you have an old mortgage with low interest it may not pay to make a change.

Labor

High labor productivity correlates with high net farm income in most cases. Plan your labor chore routes and total labor schedule to cut the time input. If you are hiring labor, it will continue to cost you more; so strive for top productivity per man.

Volume of Business and Size of Herd

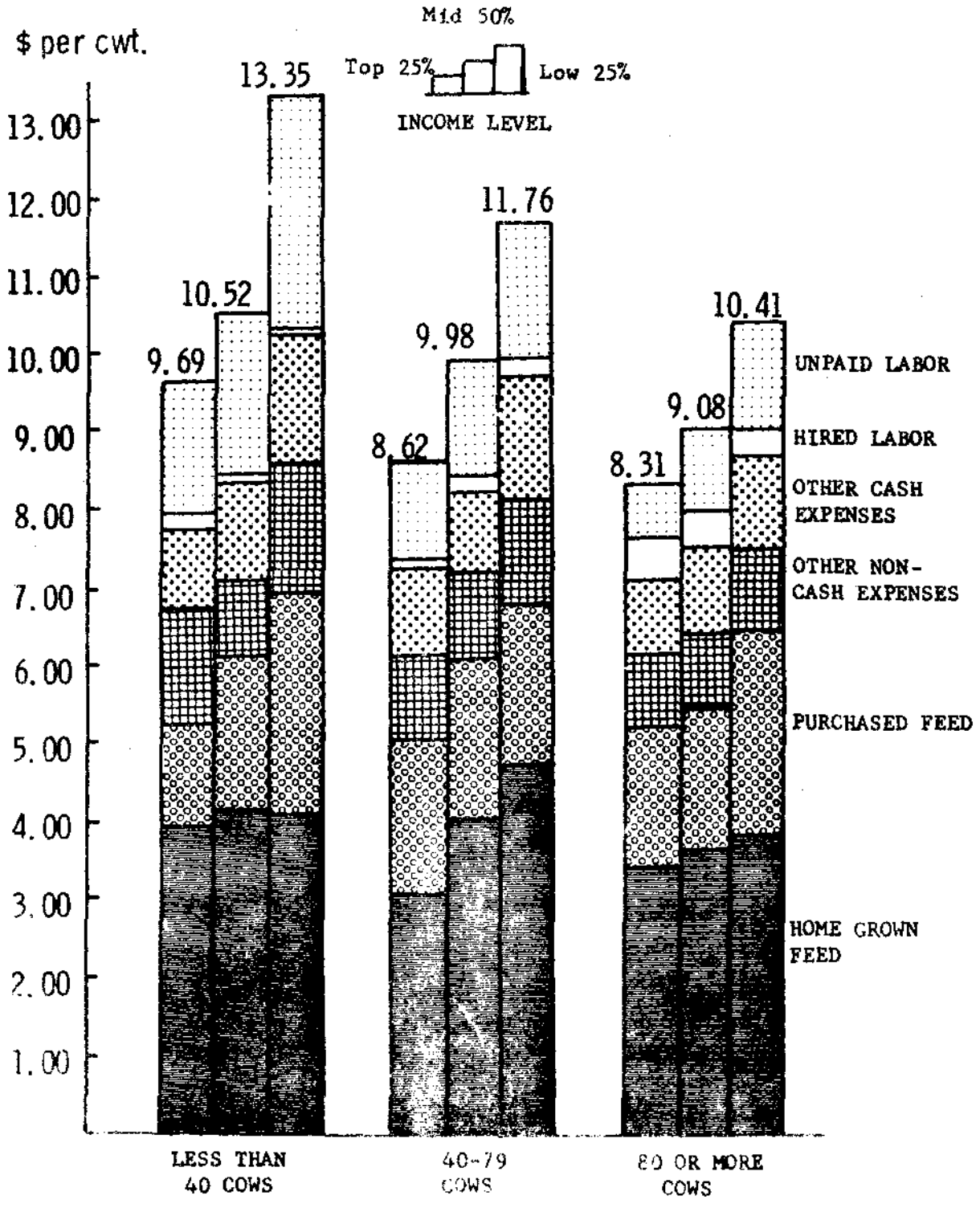
The Ohio farm business analysis summary for dairy farms in 1974 by herd size shows that good managers profited from larger herds, but on the average the cost of production per cwt. was not much different as you can see by Table II.

Table II shows the costs of milk production per cwt. for the three income levels of each herd size. The graph shows large differences between averages of the most efficient and least efficient producers within each herd size. The difference within herd sizes was much greater than differences between herd sizes.

TABLE II:

COST OF PRODUCING MILK

OHIO, 1974



1/ Includes 1/2 value of feed and other expenses (not including labor and depreciation) and mid-value of cow at 8% interest.

Ex. 14,000 lb. cow, expenses 678 ÷ 2 = 339 x .08% = $27.12
Cow-($575-300SV) = 275 = $138 + 300 S.V. = 438 x .08% = 35.04
$62.16

2/ Assumes an approximate average cost overtime for a 60 cow herd of $60,000 for buildings including feed bunks, milk house, milking parlor, silos, etc. $60,000 x 17% (fixed costs) = $10,200 ÷ 60 cows = $170/cow. Also includes an average cost of $30,000 for livestock equipment such as bulk tank, unloaders, pipeline milkers, water heaters, etc. ($30,000 x 20% fixed costs) = $6000 ÷ 60 = $100/cow or $270 fixed costs per cow with an average investment of $1000 per cow in buildings and $500/cow in equipment.

3/ Based on 30% Annual Replacement Rate. Cows are purchased at $500, $575 and $650 at three production levels. All cows have a Salvage Value of $300.

4/ Net price after deducting marketing costs.

5/ Assumes 10% death loss; 50% bulls and 50% heifers; bulls sold as deacons for $25 - heifers sold for $50; $75 and $100 at different production levels; 13½ month calving interval.

Ex. 12 month ÷ 13.5 = .89 60 cows x .89 = 53.4 calves
x 10% death loss = 48 calves

24 x $25 = 600
24 x $75 = 1800
$2400 ÷ 60 cows = $40 calf value
$300 SV/cow x 30% turnover = 90 cull cow
$130
Plus $8.00 milk x 140 cwt = 1120
Total Value $1250

****

FEED COSTS

12,000 lbs.

Corn 45 bu. @2.50/bu.	=	$112.50
SBOM 425 lb. @7.50/cwt.	=	31.88
100 lb. mineral @$.14/lb.	=	14.00
100 lb. salt @$.03/lb.	=	3.00
6 ton hay equivalent @ $60/T	=	360.00
		$521.38

14,000 lbs.

Corn 65 bu.	=	$162.50
SBOM 675 lb.	=	50.63
110 lb. mineral	=	15.40
110 lb. salt	=	3.30
6 ton hay equivalent	=	360.00
		$591.83

16,000 lbs.

Corn 85 bu.	=	$212.50
SBOM 900 lb.	=	67.50
120 lb. mineral	=	16.80
120 lb. salt	=	3.60
6 ton hay equivalent	=	360.00

DAIRY COW BUDGET - 3 PRODUCTION LEVELS
(40-80 COW HERDS)

Prepared by Howard Showalter, Area Farm Management Agent, Wooster, Ohio

	Budgeted Levels of Production 12,000#	14,000#	16,000#	My farm #
Costs Per Cow				
Feed	$ 521	$ 592	$ 660	$_____
Breeding & Milk Testing	22	26	30	_____
Vet & Medicine	12	15	18	_____
Misc. Supplies & Utilities	40	45	50	_____
Interest on Cow & Operating[1/]	55	62	68	_____
Total Variable Costs	$ 650	$ 740	$ 826	$_____
Per Cwt. Milk	$5.42	$5.29	$5.16	$_____
Labor Costs (60 hrs. @$3.50/hr.)	210	210	210	_____
Total Variable & Labor Costs	$ 860	$ 950	$1036	$_____
Per Cwt. Milk	$7.17	$6.79	$6.48	$_____
Fixed Costs on Bldgs. & Equipment[2/]	270	270	270	_____
Depreciation on Cow[3/]	60	83	105	_____
Total Fixed Costs	$ 330	$ 353	$ 375	$_____
Per Cwt. Milk	$2.75	$2.52	$2.34	$_____
Total Costs Variable, Labor & Fixed	$1190	$1303	$1411	$_____
Per Cwt. Milk	$9.92	$9.31	$8.82	$_____
Income Per Cow				
Milk @$7.50/cwt.[4/] Calf $30-40-50 & $90 cull cow[5/]	$1020	$1180	$1340	$_____
Milk @$8.00	$1080	$1250	$1420	$_____
Milk @$8.50	$1140	$1320	$1500	$_____
Milk @$9.00	$1200	$1390	$1580	$_____
Net Returns Per Cow				
Milk @$7.50 (returns to mgt. & Profit)	$-170	$-123	$- 71	$_____
Returns to Labor, Mgt. & Profit	$ 40	$ 87	$ 139	$_____
Milk @$8.00 Mgt. & Profit	$-110	$- 53	$ 9	$_____
Labor, Mgt. & Profit	$ 100	$ 157	$ 219	$_____
Milk @$8.50 Mgt. & Profit	$- 50	$ 17	$ 89	$_____
Labor, Mgt. & Profit	$ 160	$ 227	$ 299	$_____
Milk @$9.00 Mgt. & Profit	$ 10	$ 87	$ 169	$_____
Labor, Mgt. & Profit	$ 220	$ 297	$ 379	$_____

ESTIMATED DOLLARS AVAILABLE TO PAY ANNUAL BUILDING & EQUIPMENT COSTS PER COW WITH MILK @$8.50/CWT.

	Budgeted Levels of Production 12,000#	14,000#	16,000#	Farm #
Profit Per Cow @ $8.50 1/	$ - 50	$ 17	$ 89	$_____
Depreciation & Interest on Buildings ($1000 x 14%)	140	140	140	_____
Depreciation & Interest on Equipment (500 x 16%)	80	80	80	_____
	$ 170	$ 237	$ 309	$_____

Annual New Buildings & Equipment Costs (assumed):

Buildings	$10,000@ 17%	$1700
Equipment	2,500@ 20%	$ 500
Total Annual Costs		$2200
Cost per $1000 invested		$ 176

Farm Investment Program:

Buildings, $_____ @ ____%:	$_____
Equipment, $_____ @ ____%:	$_____
Total Annual Cost:	$_____
Cost per $1000 invested	$_____

Investment that can be made per cow: Net per cow x $1000 invested / Cost per $1000 invested	=	$ 966	$ 1347	$ 1756	$_____
No. Cows to Support $1000 Investment: Cost per $1000 invested / Net per cow	=	$ 1.04	.74	.57	$_____
No. Cows to Support Total Investment Planned: Total Annual Cost / Net per Cow	=	12.9	9.3	7.1	$_____

1/ Assumes that labor costs per cow charged in the budget would be used for family living. In case of expansion where no additional labor costs would be added, this amount could also be available for meeting mechanization costs provided it is not needed for family living.
Assumes payback period is the same as Depreciation life.